

What is claimed is:

1. An apparatus for adapting an audio signal for single-source multi-use, comprising:

5 an audio usage environment information management means for collecting, describing and managing audio usage environment information from each user terminal that consumes the audio signal; and

10 an audio adaptation means for adapting the audio signal so that the audio signal is outputted to the user terminal suitably to the audio usage environment information,

15 wherein the audio usage environment information includes user characteristics information that describes sound field preference of the user for the audio signal.

2. The apparatus as recited in claim 1, wherein the user characteristics information includes preference for impulse response, and the audio adaptation means adapts the audio signal, and transmits the adapted audio signal to the user terminal by changing the sound field characteristics of the audio signal based on the preference for the impulse response.

25 3. The apparatus as recited in claim 2, wherein the impulse response is described with time and amplitude.

30 4. The apparatus as recited in claim 1, wherein the user characteristics information includes preference for perceptual parameters of the audio signal, and the audio adaptation means adapts the audio signal and transmits the adapted audio signal to the user terminal by changing the sound field characteristics of the audio signal based on the preference for the perceptual parameters.

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5. The apparatus as recited in claim 1, wherein the user characteristics information includes sound environment information of a space where the user consumes the audio signal, and the audio adaptation means adapts the audio signal and transmits the adapted audio signal to the user terminal by removing adverse effects caused by the sound environment of the user among the sound field characteristics of the audio signal based on the sound environment information.

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6. The apparatus as recited in claim 5, wherein the sound environment information includes reverberation time information of the space.

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7. The apparatus as recited in claim 5, wherein the sound environment information includes initial decay time of the space.

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8. The apparatus as recited in claim 5, wherein the sound environment information includes energy ratio information between direct sound of the space and reflected sound after a predetermined time.

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9. The apparatus as recited in claim 5, wherein the sound environment information is a physical quantity that indicates the sense of sound spread and the sound environment information includes similarity information of sound that arrives at each ear of the user.

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10. A method for adapting an audio signal for single-source multi-use, comprising the steps of:

a) collecting, describing and managing audio usage environment information from each user terminal that consumes the audio signal; and

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b) adapting the audio signal so that the audio signal

is outputted to the user terminal suitably to the audio usage environment information,

wherein the audio usage environment information includes user characteristics information that describes  
5 sound field preference of the user for the audio signal.

11. The method as recited in claim 10, wherein the user characteristics information includes preference for impulse response and, at the step b), the audio signal is  
10 adapted and transmitted to the user terminal by changing the sound field characteristics of the audio signal based on the preference for the impulse response.

12. The method as recited in claim 11, wherein the  
15 impulse response is described with time and amplitude.

13. The method as recited in claim 10, wherein the user characteristics information includes preference for perceptual parameters of the audio signal and, at the step  
20 b), the audio signal is adapted and transmitted to the user terminal by changing the sound field characteristics of the audio signal based on the preference for the perceptual parameters.

14. The method as recited in claim 10, wherein the user characteristics information includes sound environment information of a space where the user consumes the audio signal and, at the step b), the audio signal is adapted and  
25 transmitted to the user terminal by removing adverse effects caused by the sound environment of the user among  
30 the sound field characteristics of the audio signal based on the sound environment information.

15. The method as recited in claim 14, wherein the  
35 sound environment information includes reverberation time

information of the space.

16. The method as recited in claim 14, wherein the  
sound environment information includes initial decay time  
5 of the space.

17. The method as recited in claim 14, wherein the  
sound environment information includes energy ratio  
information between direct sound of the space and reflected  
10 sound after a predetermined time.

18. The method as recited in claim 14, wherein the  
sound environment information is a physical quantity that  
indicates the sense of sound spread, and the sound  
15 environment information includes similarity information of  
sound that arrives at each ear of the user.